

REMARKS

Claims 3 and 14 have been amended. Claims 1-20 are currently pending in the present application. Reexamination and reconsideration of the application are respectfully requested. Claims 3 and 14 have been amended to depend on claims 2 and 13, respectively, to provide the proper antecedent basis. No new matter has been added.

REJECTION OF CLAIMS 1-20 UNDER 35 U.S.C. 103(a)

Claims 1-20 are rejected under 35 U.S.C. 103 for the reasons set forth on pages 2-3 of the Action. Specifically, claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitagawa (US Pat. No. 6,507,443) in view of Kamo (US Pat. No. 6,154,323).

The Action states that Kitagawa discloses in FIG. 3 the claimed invention, but does not disclose “first surface for performing color correction function, the first surface including a diffraction efficiency improvement mechanism,” as claimed.

The Kamo reference is cited for teaching a surface including a diffraction efficiency improvement mechanism for performing the function of color correction. The Action further states that it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the Kitagawa’s lens in light of Kamo’s teaching for the same purpose of color correction as disclosed by Kamo.

Regarding claims 5 and 16, the Action states that TABLE 1 of Kitagawa indicates that the distance between the aperture and the focal plane is less than 6mm.

The rejections under 35 U.S.C. 103 are respectfully traversed, at least insofar as applied to the amended claims, and reconsideration and reexamination of the application is respectfully requested for the reasons set forth hereinbelow.

The Action on page 2 proposes a combination of Kitagawa's lens with a diffractive surface from the Kamo reference. This combination is contested as improper for the reasons advanced below. However, even if this combination were proper, which is not conceded, the resulting combination would still fail to teach or suggest the claimed invention.

THE PROPOSED COMBINATION IS BASED ON IMPERMISSIBLE USE OF THE
CLAIMED INVENTION AS A TEMPLATE TO PIECE TOGETHER THE
TEACHINGS OF THE KITAGAWA REFERENCE AND THE KAMO REFERENCE

The Action states that Kitagawa teaches most of the components of the claimed invention. The Action further states that the Kitagawa reference fails to teach or suggest, "first surface for performing color correction function, the first surface including a diffraction efficiency improvement mechanism," as claimed. The Kamo reference is then cited for teaching all the deficiencies of the Kitagawa reference. The Action proposes the combination of Kitagawa's single lens design with a diffractive surface selected from Kamo.

It is respectfully submitted that the Kitagawa and Kamo references are improperly combined. It appears that the Action uses improper hindsight to selectively pick pieces from Kitagawa and pieces from Kamo to arrive at the claimed invention.

First, it is respectfully submitted that the Kitagawa reference does not explicitly or implicitly teach or suggest any motivation to combine the Kitagawa reference with the Kamo reference or any motivation to modify the Kitagawa single lens design with a selected diffractive surface from the Kamo reference. Furthermore, it is respectfully submitted that the Kamo reference does not explicitly or implicitly teach or suggest any motivation to employ a diffractive surface for the purpose of color correction in a single lens design.

The Action suggests that the single lens of Kitagawa be modified with a diffractive surface from Kamo as noted previously. It is unclear whether such a modification is enabled by the disclosure of the cited references or whether such a modification or combination is even possible since the diffractive surfaces of Kamo are design to achieve optical results that are different from those optical properties and results desired by single lens design of Kitagawa.

Assuming arguendo that a diffractive surface of Kamo can be incorporated into the single lens design of Kitagawa, the Federal Circuit has stated, "The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." In re Fritch, 972 F.2d 1260, 23 USPQ 2d 1780, 1783-84 (Fed. Cir. 1992) [emphasis added].

The Federal Circuit has further held In re Fritch, 972 F.2d 1260, 23 USPQ 2d 1780, 1783 (Fed. Cir. 1992):

In proceedings before the Patent and Trademark Office, the Examiner bears the burden of establishing a prima facie case of obviousness based upon the prior art. ... “[The Examiner] can satisfy this burden only by showing some objective teaching in the prior art ... would lead that individual to combine the relevant teachings of the references. In re Fine, 837 F.2d 1071, 1074, 5 USPQ 2d 1596, 1598 (Fed. Cir. 1988). [emphasis added.]

The Action on page 2 cites, “since Kitagawa and Kamo are both from the same field of endeavor,” as the motivation to combine the teachings of the Kitagawa reference with selected disclosures from the Kamo reference. Specifically, the portion states, “it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify Kitagawa’s lens in light of Kamo’s teaching for the purpose of color correction as disclosed by Kamo.

Although both references are related to optics as a general matter, it is respectfully submitted that the considerations in designing a single lens for applications with a “strict height requirement” (see Background, pages 2 to 3 of application) are very different from the considerations for designing a “high zoom, low-cost zoom lens system with a first lens group (G1) having a positive refracting power and a second lens group (G2) having a negative refracting power.” (see Abstract, lines 1-6)

Not only does Kamo employ two groups (G1 and G2) of lens, where each group has multiple lenses, but also, the Kamo system utilizes a staggering 11 surfaces (i.e., r_1, r_2, \dots, r_{11}), where often two of the surfaces are diffractive in nature (Examples 1, 4, 5 and 6). In those cases where Kamo uses a single diffractive surface (Examples 2, 3, 7, 8 and 9), it appears that none of those diffractive surfaces is in the position of the

first surface (r_1), which would be the position corresponding to the first surface of the lens as claimed. In this regard, the diffractive surfaces utilized by Kamo are not the same and do not fairly teach the first surface as claimed.

Consequently, it is respectfully suggested that this quoted portion from the Action is deficient and would not have motivated one of ordinary skill in the art to combine the pieces of information in the manner suggested by the Action.

Furthermore, even if the use of a diffractive surface for the purpose of correcting “chromatic aberrations” (Kamo, col. 29, lines 3-19) as set forth in Kamo, this alone is not sufficient to render obvious the claimed invention since the use of a known diffractive surface in a new and non-obvious manner, for example, as applied to a single lens design for applications with a small height restriction, is patentable.

Consequently, it appears that the current patent application has been improperly used as a basis for the motivation to combine or modify the components selected from Kitagawa and Kamo to arrive at the claimed invention. Stated differently, the proposed combination of the cited references appear to be based on hindsight since the cited references do not teach or suggest a motivation to combine the respective elements of each reference in the manner proposed by the Action.

The Federal Circuit has held, “It is impermissible to use the claimed invention as an instruction manual or “template” to piece together the teachings of the prior art so that the claimed invention is rendered obvious. This court has previously stated, “[o]ne cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.” (quoting *In re Fine*, 837 F.2d 1071,

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1075, 5 USPQ 2d 1596, 1600 (Fed. Cir. 1988)), In re Fritch, 23 USPQ 2d 1780, 1784 (Fed. Cir. 1992). [emphasis added.]

Furthermore, the Federal Circuit has held, “The combination of elements from non-analogous sources, in a manner that reconstructs the applicant's invention only with the benefit of hindsight, is insufficient to present a prima facie case of obviousness. There must be some reason, suggestion, or motivation found in the prior art whereby a person of ordinary skill in the field of the invention would make the combination. That knowledge can not come from the applicant's invention itself.” In re Oetiker, 977 F.2d 1443, 24 USPQ 2d 1443, 1446 (Fed. Cir. 1992)

Accordingly, hindsight reconstruction may not be used to pick a component from Kitagawa and another component from Kamo to arrive at the invention as claimed. Accordingly, it is respectfully requested that the rejection of claims 6, 7, 15 and 16 under 35 U.S.C. 103(a) be withdrawn.

In view of the foregoing, it is respectfully submitted that the Kitagawa reference, whether alone or in combination with the Kamo reference, fails to teach or suggest the single lens as claimed. Accordingly, it is respectfully requested that the claim rejections under 35 U.S.C. Section 103(a) be withdrawn.

EVEN IF PROPERLY COMBINED, THE KITAGAWA REFERENCE AND THE
KAMO REFERENCE FAIL TO TEACH OR SUGGEST THE SPECIFIC
LIMITATIONS SET FORTH BY THE INDEPENDENT AND DEPENDENT
CLAIMS

It is respectfully submitted that even if the Kitagawa and Kamo references were properly combined, which is not conceded, the Kitagawa and Kamo references fail to teach or suggest specific limitation recited by the claims.

It is noted that the dependent claims 2-11 and 13-20 incorporate all the limitations of independent claims 1 and 12, respectively. Furthermore, the dependent claims also add additional limitations, thereby making the dependent claims a fortiori and independently patentable over the cited references.

For example, claims 3 and 14 recite, "wherein the diffractive portion of the first surface reduces the incident angle of at least one light ray with respect to the first surface, thereby increasing the diffractive efficiency of the lens," which does not appear to be disclosed by the Kitagawa and Kamo references.

Moreover, dependent claims 4 and 15 recite, "wherein the lens has a spot size of less than about 5 microns for a full field of view of about 110 degrees," which does not appear to be disclosed by the Kitagawa and Kamo references.

Furthermore, dependent claims 6 and 17 recite, "a vignetting reducing mechanism for reducing the shadowing in the corners of an image," and "means for reducing the shadowing in the corners of an image," respectively. This limitation does not appear to be taught or suggested by the Kitagawa and Kamo references. For example, neither reference even mentions the design challenge of reducing shadowing,

as does the current application. The Background of the current application states, "Another challenge in single lens design is that the image exhibits vignetting (or shadowing) of the corners of the image. Accordingly, it is desirable for the single lens design to have a mechanism that reduces the amount of vignetting (or shadowing) of the corners of the image." (see lines 12-15 on page 3 of the Background).

Also, dependent claims 7 and 18 recite, "an aperture positioned at a predetermined distance from the first surface of the lens; wherein the predetermined distance is a value that makes the lens telecentric." This limitation does not appear to be taught or suggested by the Kitagawa and Kamo references.

Moreover, dependent claims 8 and 19 recite, "an aperture positioned at a predetermined distance from the first surface of the lens; wherein the predetermined distance causes a chief ray to be generally perpendicular to the focal plane." This limitation does not appear to be taught or suggested by the Kitagawa and Kamo references.

After a review of the cited references, there does not appear to be any teaching of the specific claims limitations recited by the dependent claims. In this regard, it is respectfully requested that the next Action specifically point out those portions of the cited reference that teach or suggest the specific recited elements in the claimed invention.

In view of the foregoing, it is respectfully submitted that the Kitagawa reference, whether alone or in combination with the Kamo reference, fails to teach or

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suggest the single lens as claimed. Accordingly, it is respectfully requested that the claim rejections under 35 U.S.C. Section 103(a) be withdrawn.

Conclusion

For all the reasons advanced above, it is respectfully submitted that the application is in condition for allowance. Reexamination and reconsideration of the pending claims are requested, and allowance is earnestly solicited at an early date. The Examiner is invited to telephone the undersigned if the Examiner has any suggestions, thoughts or comments, which might expedite the prosecution of this case.


Respectfully submitted,



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January 15, 2004
(Date)